

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (original) A solder joint between a solder and a conductor terminal formed on a wiring structure, comprising:

a nickel layer formed by nickel-phosphorus electroless plating on the conductor terminal;

an intermetallic compound layer formed on the nickel layer, the intermetallic compound layer including tin (Sn), copper (Cu), and nickel (Ni); and

a solder layer formed on the intermetallic compound layer, the solder layer including tin (Sn), silver (Ag), and copper (Cu).

2. (original) The solder joint according to claim 1, wherein the intermetallic compound is composed mainly of tin (Sn) and copper (Cu).

3. (previously presented) The solder joint according to claim 1, wherein the intermetallic compound layer has botryoidal surfaces formed in a solder-layer's side thereof.

4. (original) The solder joint according to claim 1, wherein the conductor terminal is composed mainly of copper.

5. (currently amended) A solder joint between a solder and a conductor terminal formed on a wiring structure, comprising:

a nickel layer formed by nickel-phosphorus electroless plating on the conductor terminal;

an intermetallic compound layer formed on the nickel layer; and

a solder layer formed on the intermetallic compound layer,

wherein the intermetallic compound layer has botryoidal surfaces formed in a solder-layer's side thereof, the botryoidal surfaces comprising tin, copper, and nickel.

6. (original) The solder joint according to claim 5, wherein the conductor terminal is composed mainly of copper.

7. (previously presented) A wiring structure having a plurality of conductor terminals formed thereon, each of which is soldered to form a solder joint, the solder joint comprising:

a nickel layer formed by nickel-phosphorus electroless plating on a said conductor terminal;

an intermetallic compound layer formed on the nickel layer, the intermetallic compound layer including tin (Sn), copper (Cu), and nickel (Ni); and

a solder layer formed on the intermetallic compound layer, the solder layer including tin (Sn), silver (Ag), and copper (Cu).

8. (previously presented) The wiring structure according to claim 7, wherein the intermetallic compound layer has botryoidal surfaces formed in a solder-layer's side thereof.

9. (currently amended) A wiring structure having a plurality of conductor terminals formed thereon, each of which is soldered to form a solder joint, the solder joint comprising:

a nickel layer formed by nickel-phosphorus electroless plating on a said conductor terminal;

an intermetallic compound layer formed on the nickel layer; and

a solder layer formed on the intermetallic compound layer,

wherein the intermetallic compound layer has botryoidal surfaces formed in a solder-layer's side thereof, the botryoidal surfaces comprising tin, copper, and nickel.

10. (previously presented) A device comprising:

a wiring substrate having a plurality of substrate terminals formed thereon; and

a functional circuit having a plurality of circuit terminals, wherein the substrate terminals are soldered to respective ones of the circuit terminals at solder joints,

wherein each of the solder joints comprises:

a nickel layer formed by nickel-phosphorus electroless plating on each of a corresponding substrate terminal and a corresponding circuit terminal;

an intermetallic compound layer formed on the nickel layer, the intermetallic compound layer including tin (Sn), copper (Cu), and nickel (Ni); and

a solder layer formed on the intermetallic compound layer, the solder layer including tin (Sn), silver (Ag), and copper (Cu).

11. (previously presented) The device according to claim 10, wherein the intermetallic compound layer has botryoidal surfaces formed in a solder-layer's side thereof.

12. (currently amended) A device comprising:

a wiring substrate having a plurality of substrate terminals formed thereon; and

a functional circuit having a plurality of circuit terminals, wherein the substrate terminals are electrically

connected to respective ones of the circuit terminals at solder joints,

wherein each of the solder joints comprises:

a nickel layer formed by nickel-phosphorus electroless plating on each of a corresponding substrate terminal and a corresponding circuit terminal;

an intermetallic compound layer formed on the nickel layer; and

a solder layer formed on the intermetallic compound layer,

wherein the intermetallic compound layer has botryoidal surfaces formed in a solder-layer's side thereof, the botryoidal surfaces comprising tin, copper, and nickel.

13. (original) A device comprising:

a printed circuit substrate having a plurality of substrate terminals formed thereon; and

a semiconductor chip package having a plurality of package terminals, wherein the substrate terminals are soldered to respective ones of the package terminals at solder joints,

wherein each of the solder joints comprises:

a nickel layer formed by nickel-phosphorus electroless plating on each of a corresponding substrate terminal and a corresponding package terminal;

an intermetallic compound layer formed on the nickel layer, the intermetallic compound layer including tin (Sn), copper (Cu), and nickel (Ni); and

a solder layer formed on the intermetallic compound layer, the solder layer including tin (Sn), silver (Ag), and copper (Cu).

14. (previously presented) The device according to claim 13, wherein the intermetallic compound layer has botryoidal surfaces formed in a solder-layer's side thereof.

15. (currently amended) A device comprising:

a printed circuit substrate having a plurality of substrate terminals formed thereon; and

a semiconductor chip package having a plurality of package terminals, wherein the substrate terminals are soldered to respective ones of the package terminals at solder joints,

wherein each of the solder joints comprises:

a nickel layer formed by nickel-phosphorus electroless plating on each of a corresponding substrate terminal and a corresponding package terminal;

an intermetallic compound layer formed on the nickel layer; and

a solder layer formed on the intermetallic compound layer,

wherein the intermetallic compound layer has botryoidal surfaces formed in a solder-layer's side thereof, the botryoidal surfaces comprising tin, copper, and nickel.

16. (new) The solder joint of claim 5, wherein, the solder layer includes tin (Sn), silver (Ag), and copper (Cu).

17. (new) The wiring structure of claim 9, wherein, the solder layer includes tin (Sn), silver (Ag), and copper (Cu).

18. (new) The device of claim 12, wherein, the solder layer includes tin (Sn), silver (Ag), and copper (Cu).

19. (new) The device of claim 15, wherein, the solder layer includes tin (Sn), silver (Ag), and copper (Cu).